

A wide-angle photograph of the Niagara River in flood. The water is turbulent and brown, with large white rapids in the foreground. In the background, the city skyline of Niagara Falls is visible, including the prominent blue and white glass tower (Scotiabank Tower). The sky is blue with scattered white clouds. On the left bank, there are green trees and a few people walking. A white bridge is visible in the middle ground.

The Flood of 2013

Owen A Tobert, FCAE
CAMA 2014 Conference
Niagara Falls, ON



- What happened?

- How did it happen?

- What did we learn,...this time?

- What happened?

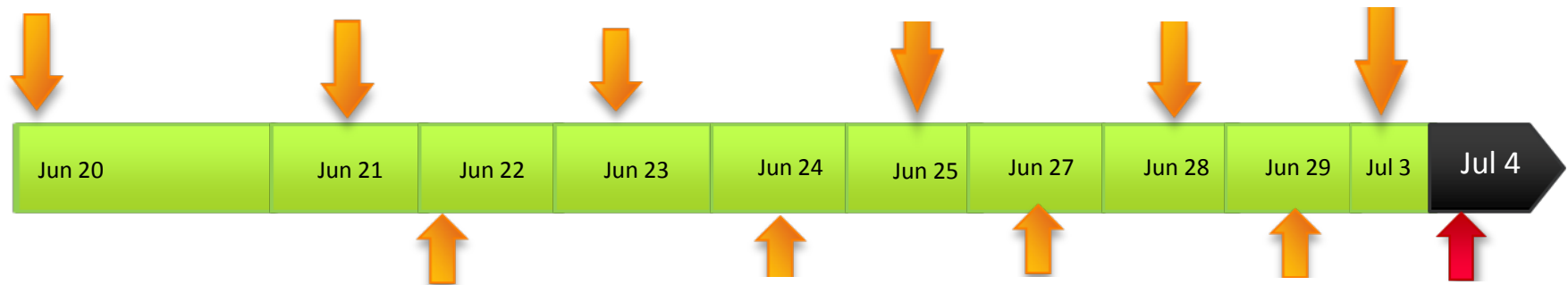
• What did we learn...this time?



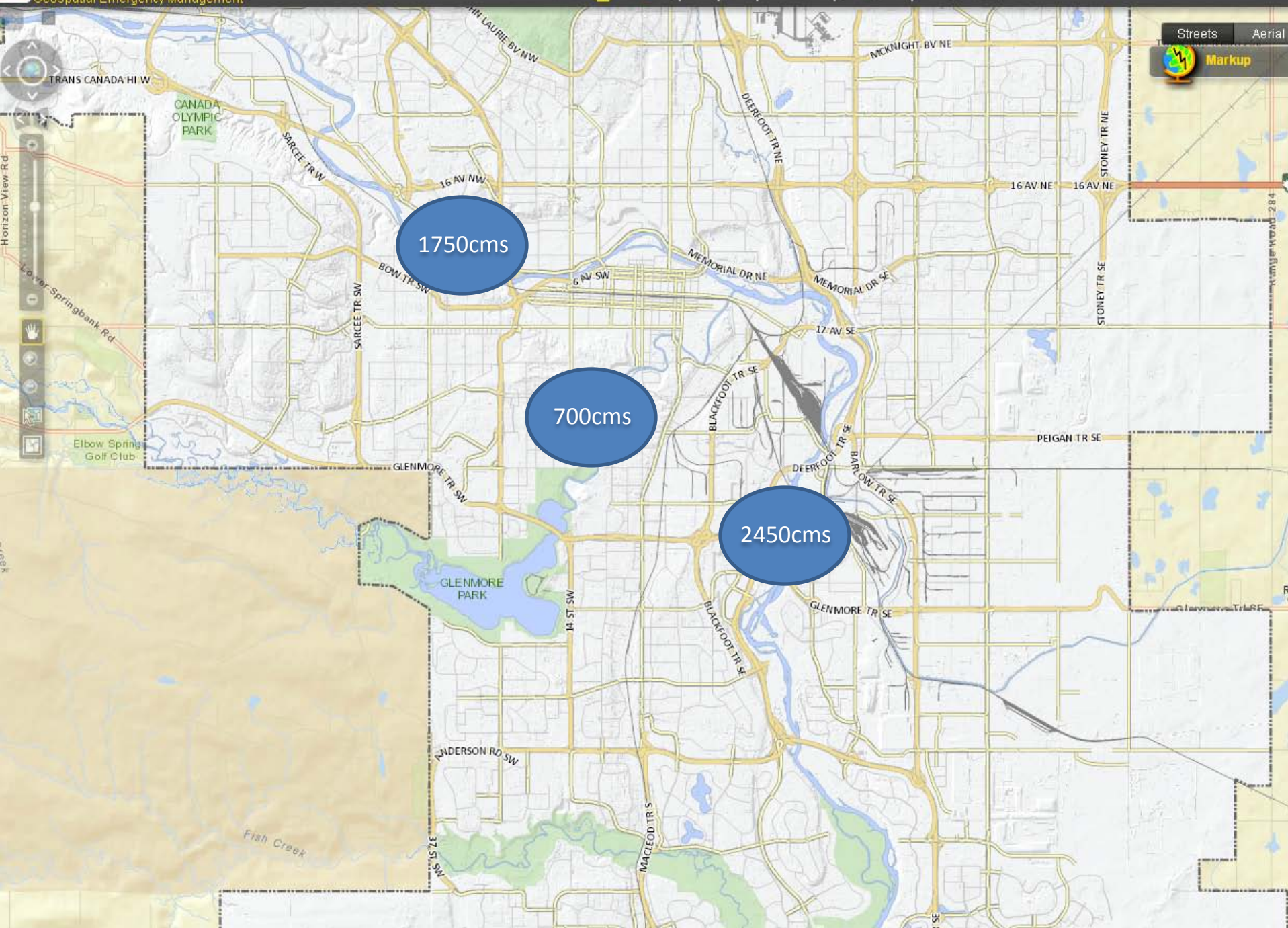
EVENT CHRONOLOGY

- 0220 – EM flooding
- 0330 1:100 flow on Bow River (1750 CMS)
- 0759 – ME
- 0700 Community evacuations
- 1018 SOLE completed (26 communities)

transit lines restored




- Pea mair
- Six c
- Safety inspect SOLE expires. MEP remains in effect.
- Calgæ for re-energiza





1

THE FLOOD



The Bow river flows peaked at
2,400 m³/second, 8x the regular flow
and more than **3x the 2005 flood.**

The Elbow river inflow peaked at
1,240 m³/second, 12x the regular rate
and more than **3x the 2005 flood.**



Outflow below the Glenmore Dam was **700 m³/second,**
about **7x normal** and about **2.5x the 2005 flood.**

2013 Flood level

2005 Flood level

2

THE **FALLOUT**

Evacuations in **32 communities**
affected **80,000** Calgarians.



More than **1,600 people** registered at
community support centres on the first day.

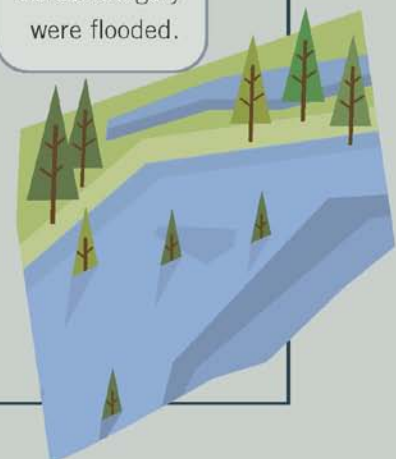


16 LRT stations
were closed.

More than 20 bridges were closed.



30 parks
across Calgary
were flooded.



More than 50 bus routes
were cancelled or detoured.

34,000 locations
were without power.



A photograph of a city skyline across a river. The water is turbulent and brown, suggesting a flood or high water level. The city skyline includes several tall buildings, including a prominent one with a white geometric pattern. The sky is blue with some clouds. In the foreground, there is a grassy bank on the left and a tree on the right. Three bullet points are overlaid on the image.

- What happened?

- How did it happen?

- What did we learn...this time?

Western Aspect of the Bow Valley Watershed

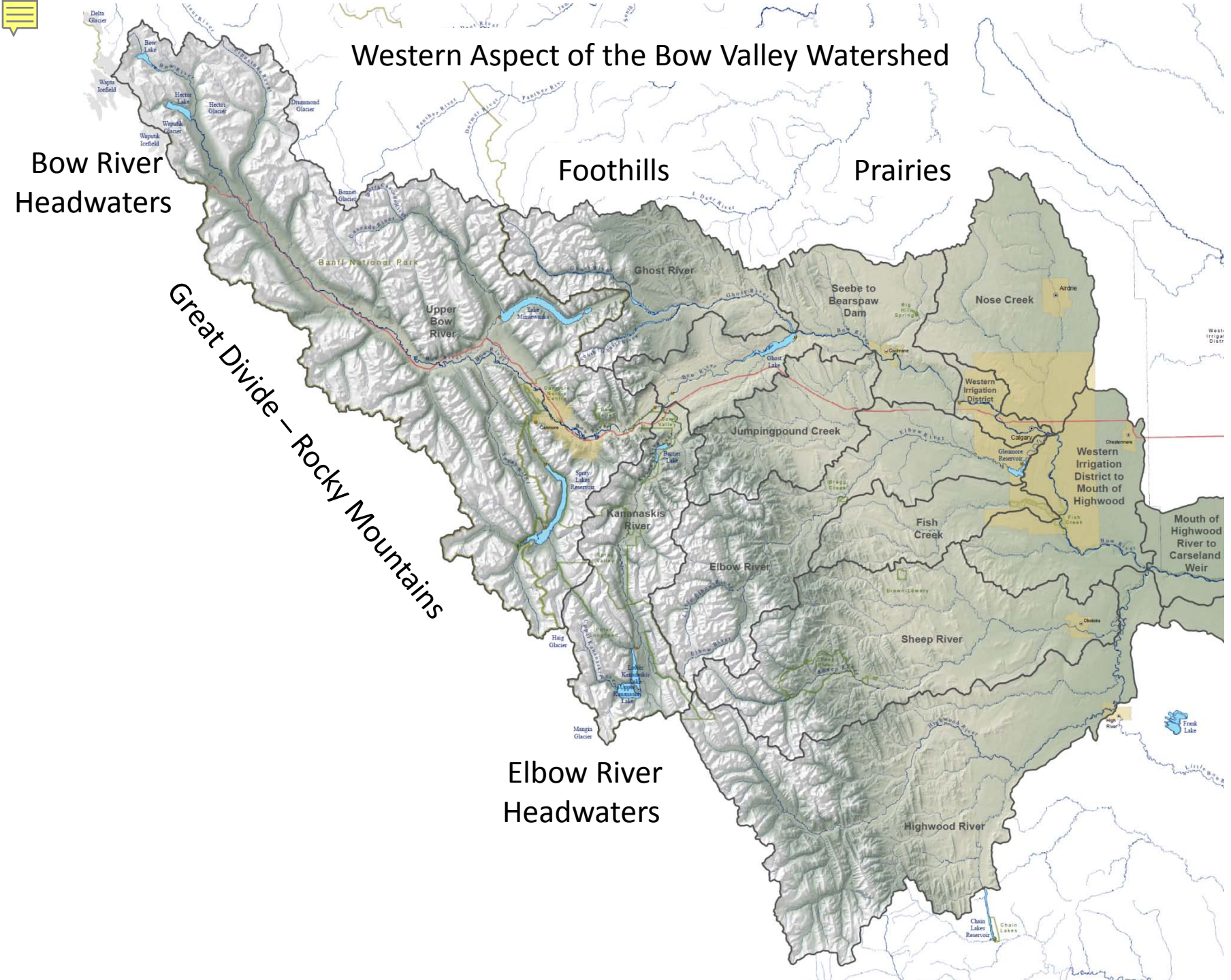
Bow River
Headwaters

Foothills

Prairies

Great Divide – Rocky Mountains

Elbow River
Headwaters





1850 UTC
2013-06-20

Scale/Échelle:
1km/Pixel
40 KM |————|

Weather Trifecta:

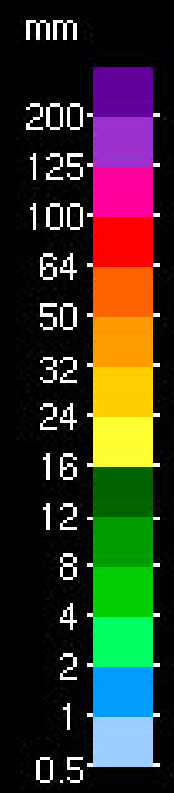
1. Ground saturated and/or frozen
2. High snow pack and pending warm temperatures
3. Precipitation, rain and/or snow in higher elevation



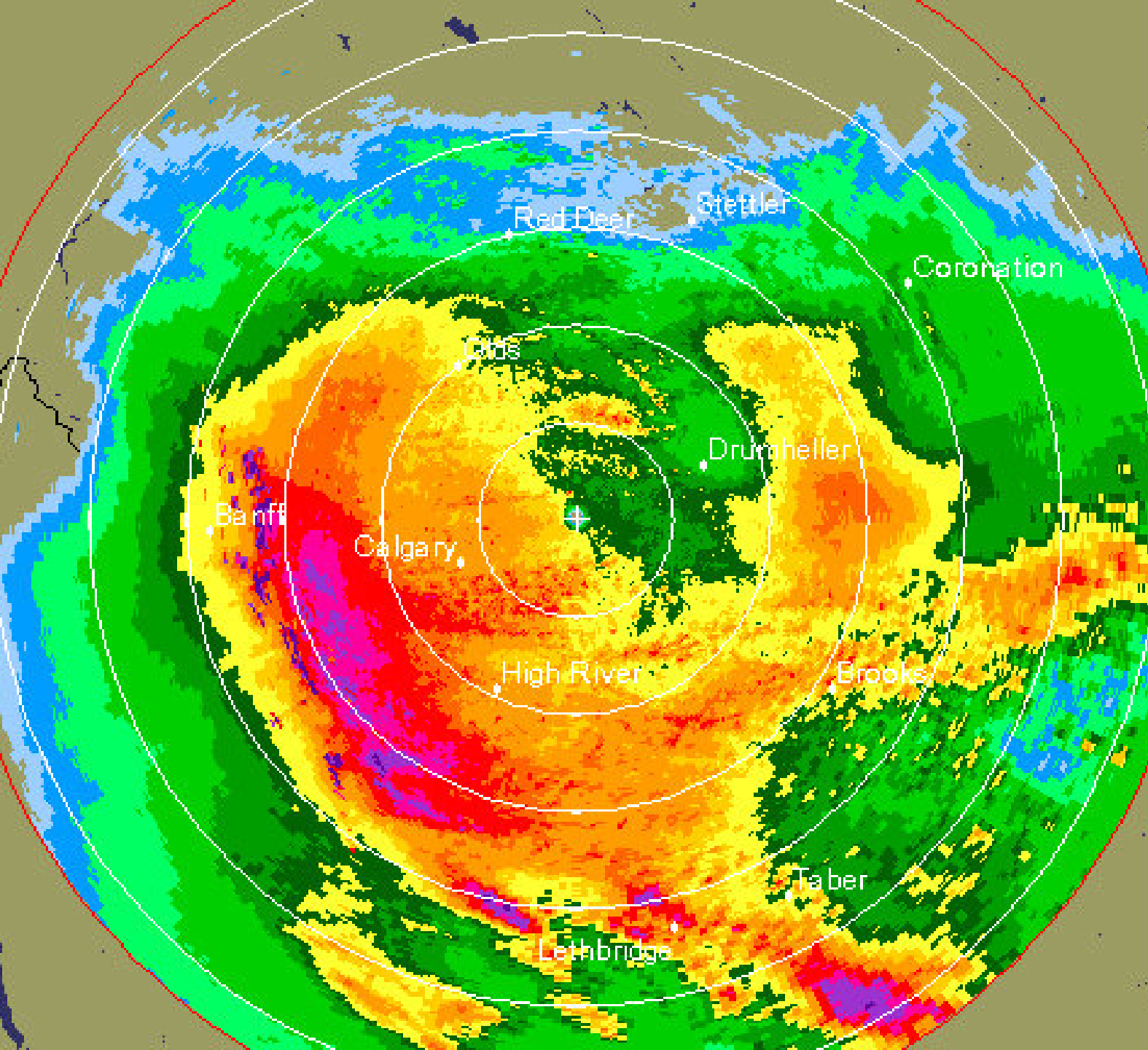
PA
24.00 hours

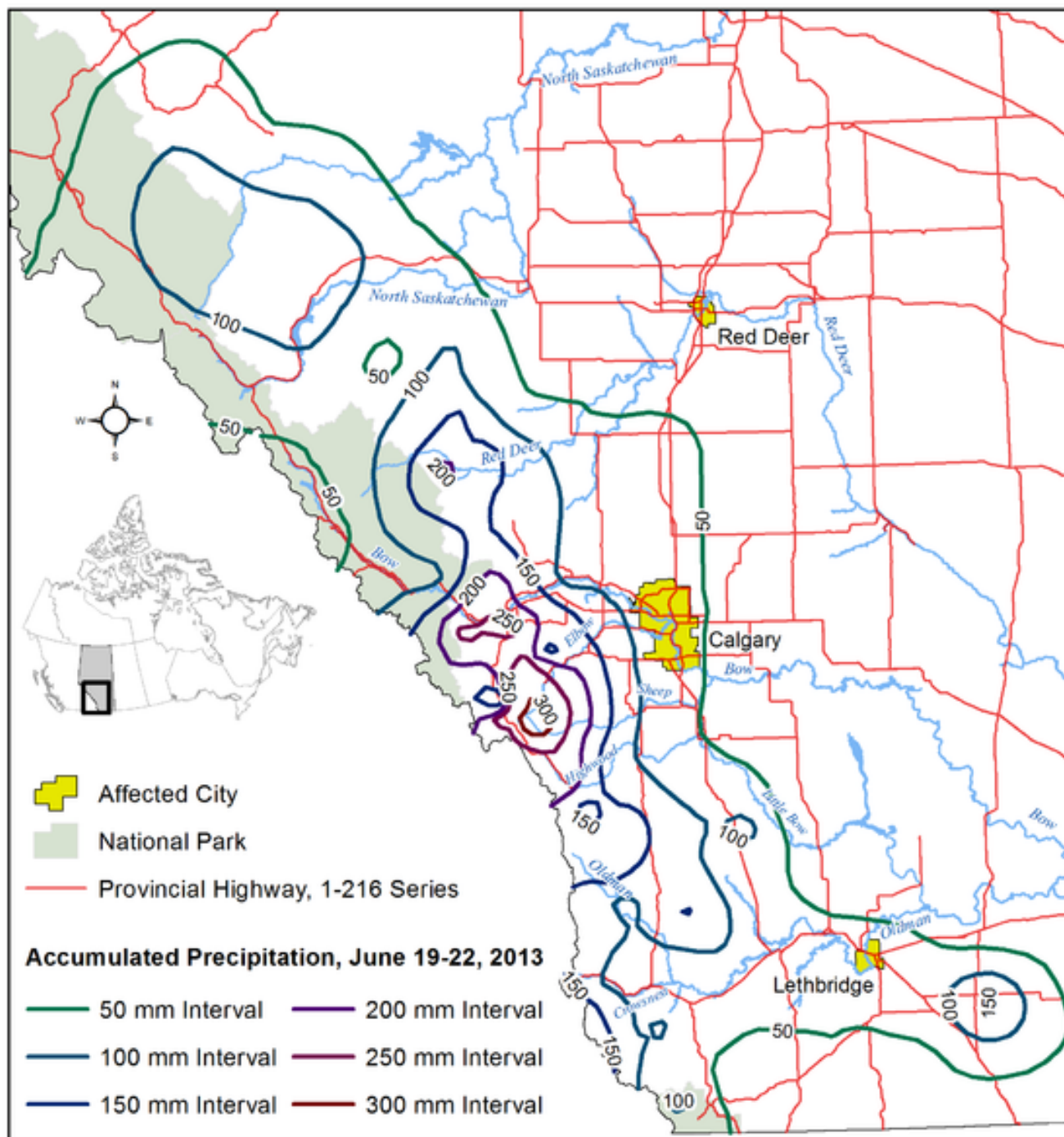
1850 UTC
2013-06-20

Scale/Échelle:
1km/Pixel
40 KM |



PA
24.00 hours





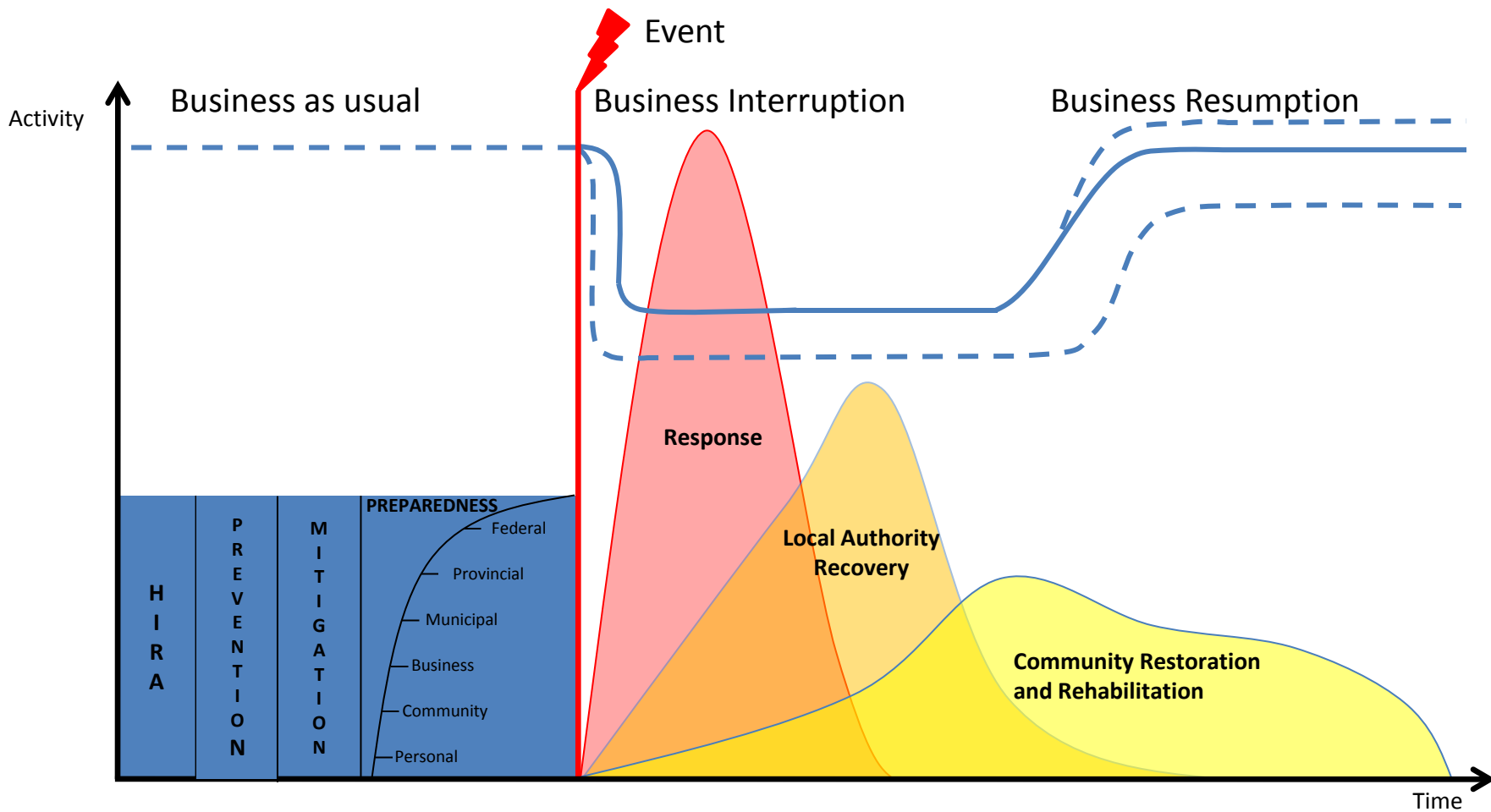
• What happened?

• What did we learn



Lessons Learned

- Implemented learning's from 2005 Flood
 - Built a new EOC model that focused on recovery right away,
 - Built a new emergency operations center, sought funding immediately after the 2005 flood (opened April, 2013)
 - Rigorous EO and RO practice, practice, practice






Emergency
Operations
Centre
THE CITY OF
CALGARY
Publicly available to general city
617 / 673 1 Street N.E.



Lessons Learned

- Begin planning for recovery DAY 1 of the emergency, including recovery metrics
- Social Media is your friend
 - Mayor primary communicator
 - Heavy use of Twitter
- Changing work methodology
 - *“We can no longer afford to work at the speed of Government” LA Fire Capt.*
 - Safely, quickly
 - Not policy and procedure driven



CITY OF
CALGARY

EMERGENCY MANAGEMENT
AGENCY

Lessons Learned

- Engage Volunteers early and productively
 - Because of the limited area of flood impact, considerable segments of community had capacity and willingness to assist others recover
- Ongoing challenge encourage community members to take steps to increase their ability to protect and take of themselves and others without municipal support

Lessons Learned

- Community has unbelievable capacity for self help, out of 80,000 people evacuated, less than 2,000 needed overnight accommodation
- Volunteers
 - Don't try to keep them out
 - Facilitate their success
 - Facilitate tools, transportation, PPE
 - Link to Inspiring Strong Neighbourhoods?
- Focus on recovery, recovery, recovery

















the calgary zoo after the flood... man, i hope everyone is safe, especially the animals.

pic.twitter.com/2TvblrTnOl

← Reply ↻ Retweet ★ Favorite ⋮ More





















THANKS EVERYBODY
FOR ALL THE
HELP.

I'm good now.

6002

THANK

♡ you ♡

VOLUNTEERS

THANK

♡ you ♡

GALGARY

NEED:
ELECTRI-
CITY

NEED:
MORE
WINE

NEED:
CUTE
FIREMAN

WE LOST SOME STUFF
WE GAINED A COMMUNITY
 THANK YOU!



Support On



Thank
you!!

ENGINE